IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT
APPEALS AND INTERFERENCES

In Re Application of:	)
	)
James Albert Mathews	)
	)
Serial No.: 10/632,167	) Group Art Unit: 2878
	)
Filed: July 30, 2003	) Examiner: Stephen K. Yam
	)
For: INTEGRATED OPTICAL DETECTOR AND DIFFRACTIVE OPTICAL ELEMENT	) Atty Dkt. 10030278-1

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This Appeal Brief is submitted in response to the final rejection of the claims mailed January 23, 2007. A Notice of Appeal was filed on April 17, 2007.

This brief contains items under the following headings as required by 37 CFR §41.37 and MPEP §1206:

(1) Real Party In Interest
(2) Related Appeals, Interferences and Judicial Proceedings
(3) Status of Claims
(4) Status of Amendments
(5) Summary of Claimed Subject Matter
(6) Grounds of Rejection to be Reviewed on Appeal
(7) Argument
(8) Claims Appendix
(9) Evidence Appendix
(10) Related Proceedings Appendix

(1) REAL PARTY IN INTEREST

The real party in interest in the above-referenced patent application is Avago Technologies Fiber IP (Singapore) Pte. Ltd., having an address at No. 1 Yishun Avenue 7, Singapore 768923

(2) RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences currently known to appellants, appellants' legal representatives or the assignee, which will directly affect, or be directly affected by, or have a bearing on, the Board's decision.

(3) STATUS OF CLAIMS

Claims 1-19 were filed with the application. Claims 1, 5, 6, 10, 11, and 19-23 are currently pending in the application, all of which stand rejected. The rejection of claims 1, 5, 6, 10, 11, and 19-23 is appealed.

(4) STATUS OF AMENDMENTS

No amendments were filed or entered subsequently to the final Office action mailed January 23, 2007. A response was filed subsequently to the final Office action mailed January 23, 2007. The response contained no amendments.

(5) SUMMARY OF THE CLAIMED SUBJECT MATTER

Appellants' invention as independently claimed is summarized and explained below with reference numerals, specification page numbers and drawing figure numbers indicating where the claim finds support in the specification and drawings.

The integrated optical apparatus of claim 1 is configured to detect and diffract light transmitted from a light source (215) external to the integrated optical apparatus. The integrated optical apparatus includes a substrate (201) and a diffractive optical element (202) [Figure 2B; page 4, lines 13-19]. The diffractive optical element (202) includes a plurality of stacked layers of optically transmissive material formed on the substrate (201) [Figure 2B; page 4, lines 13-19]. At least one of the layers of the optically transmissive material is a sensing element (207) [Figure 2B; page 4, lines 17-19]. The sensing element (207) has a resistance that is responsive to incident light [Figure 2B; page 4, lines 17-19].

(6) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Claims 1, 5, 6, 10, 11, and 19-23 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Wagner et al. (US Patent No. 6,879,014) in view of Morris, Jr. et al. (US Patent No. 6,452,669).

(7) ARGUMENT

Argument re Issue A

Claims 1, 5, 6, 10, 11, and 19-23 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Wagner et al. (US Patent No. 6,879,014) in view of Morris, Jr. et al. (US Patent No. 6,452,669). Appellants respectfully assert, for at least the reasons advanced below, that claims 1, 5, 6, 10, 11, and 19-23 are not unpatentable over Wagner et al. (US Patent No. 6,879,014) in view of Morris, Jr. et al. (US Patent No. 6,452,669).

Claim 1

Claim 1 recites the following:

An integrated optical apparatus configured to detect and diffract light transmitted from a light source external to the integrated optical apparatus, the integrated optical apparatus comprising:

a substrate; and

a diffractive optical element including:

a plurality of stacked layers of optically transmissive material formed on the substrate, wherein at least one of the

layers of optically transmissive material is a sensing element having a resistance responsive to incident light.

Appellants respectfully assert that the Examiner has failed to establish a *prima facie* case of obviousness because there is no suggestion to combine the reference teachings as proposed by the Examiner. There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. MPEP §706.02(j).

The Examiner states the following on page 2 of the final rejection regarding the instant rejection:

> Regarding Claim 1, Wagner et al. teach (see Fig. 1, 4, and 8) an integrated optical apparatus (100) configured to detect light transmitted from a light soruce (402) external to the integrated optical apparatus (see Fig. 4), the integrated optical apparatus comprising a substrate (106) (see Fig. 8), and an optical element including a plurality of stacked layers (101-103) of optically transmissive material (see Fig.1 and Col. 8, lines 39-40) formed on the substrate (see Fig. 8), wherein at least one of the layers (101-103) of optically transmissive material is a sensing element (see Col. 8, lines 30-38) having a resistance responsive to incident light (as a photodiode operating in reverse bias (see Col. 9, lines 38-43) has a resistance proportional to incident light). Wagner et al. do not teach the apparatus diffracting light with the optical element as a diffractive optical element.

The Examiner, thus, admits that the primary reference, Wagner et al., fails to teach or suggest an apparatus diffracting light with the optical element as a diffractive optical element as recited in appellants' claim 1, but takes the position, that this limitation would be obvious in view of the Morris, Jr. et al. reference. Appellants respectfully assert that the Examiner's position is improper because there is no motivation to combine the Wagner et al. and Morris, Jr. et al. references as proposed by the Examiner.

The Examiner has provided no basis for a teaching or suggestion in the prior art for combining elements as proposed in the final rejection. The Examiner's argument regarding obviousness is as follows:

> It would have been obvious to one of ordinary skill in the art at the time the invention was made to *provide the optical element as a diffractive optical element for the optical apparatus to diffract light, as taught by Morris, Jr. et al., in the apparatus of Wagner et al., to provide a desired interference effect for optimal light transmission and propagation.*
>
> (final rejection, page 3, emphasis added)

The language italicized above represents the Examiner's only explanation regarding a teaching or suggestion to combine. This language, however, is simply an *unsupported statement* made by the Examiner. In order to establish a *prima facie* case, a teaching or suggestion to combine must be found *in the prior art*:

> It is insufficient to establish obviousness that the separate elements of the invention existed in the prior art, absent some teaching or suggestion, in the prior art, to combine the elements.
>
> *Arkie Lures, Inc. v. Gene Larew Tackle, Inc.*, 119 F.3d 953, 957, 43 USPQ2d 1294, 1297 (Fed. Cir. 1997).

The Examiner has not referred to any prior art in support of his position that a motivation or suggestion to combine exists but, instead, apparently expects his unsupported conclusory statement to suffice. Such an unsupported statement, however, cannot constitute the evidence required to establish existence of a motivation or suggestion to combine:

> Whether the Board relies on an express or an implicit showing [of a motivation, suggestion or teaching to modify the teachings of a reference], it must provide particular findings related thereto.... Broad conclusory statements standing alone are not "evidence".
>
> *In re Kotzab*, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (citing *In re Dembiczak*, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999))

Accordingly, the Examiner's statement does not constitute a showing of a teaching or suggestion to combine. At the very least, an Examiner must prove that some motivation or suggestion to combine can be found in knowledge generally available to one of ordinary skill in the art (see, MPEP 706.02(j) reproduced previously). In the present case, however, the Examiner provides

no evidence that the requisite knowledge is generally available but, instead, attempts to rely on personal opinion. Such personal opinion does not represent an adequate substitute for evidence.

In short, it appears that the Examiner's proposed combination of Wagner et al. and Morris, Jr. et al. is based solely on hindsight derived from appellants' specification. The use of hindsight in this manner is clearly prohibited by the relevant case law:

> Obviousness can not be established by hindsight combination to produce the claimed invention. *In re Gorman*, 933 F.2d 982, 986, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991). As discussed in *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1985), it is the prior art itself, and not the applicant's achievement, that must establish the obviousness of the combination.
>
> *In re Dance*, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998)
>
> Obviousness may not be established using hindsight. *See W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1551, 220 USPQ 303, 312-13 (Fed. Cir. 1983).
>
> *Kahn v. General Motors Corp.*, 45 USPQ2d 1608, 1613 (Fed. Cir. 1998)

Claim 5

Claim 5 recites the following:

The integrated optical apparatus as in claim 1, wherein the sensing element is configured to provide a response to a control circuit, external to the integrated optical apparatus, for measuring the response of the sensing element to incident light, and for controlling the light source.

Claim 5 is dependent on Claim 1 and therefore includes all limitations of Claim 1.

Claim 5 is allowable at least as depending from allowable base claim 1. For purposes of this appeal, claim 5 stands or falls with claim 1.

Claim 6

Claim 6 recites the following:

The integrated optical apparatus as in claim 1, wherein the light source is a laser.

Claim 6 is dependent on Claim 1 and therefore includes all limitations of Claim 1.

Claim 6 is allowable at least as depending from allowable base claim 1. For purposes of this appeal, claim 6 stands or falls with claim 1.

Claim 10

Claim 10 recites the following:

The integrated optical apparatus as in claim 1, further comprising:

a first and second contact on the sensing element for measuring the resistance of the sensing element.

Claim 10 is dependent on Claim 1 and therefore includes all limitations of Claim 1.

Claim 10 is allowable at least as depending from allowable base claim 1. For purposes of this appeal, claim 10 stands or falls with claim 1.

Claim 11

Claim 11 recites the following:

The integrated optical apparatus as in claim 1, wherein the optically transmissive material includes a semiconductor.

Claim 11 is dependent on Claim 1 and therefore includes all limitations of Claim 1.

Claim 11 is allowable at least as depending from allowable base claim 1. For purposes of this appeal, claim 11 stands or falls with claim 1.

Claim 19

Claim 19 recites the following:

The integrated optical apparatus as in claim 1, wherein the temperature of the sensing element is responsive to light.

Claim 19 is dependent on Claim 1 and therefore includes all limitations of Claim 1.

Claim 19 is allowable at least as depending from allowable base claim 1. For purposes of this appeal, claim 19 stands or falls with claim 1.

Claim 20

Claim 20 recites the following:

The integrated optical apparatus as in claim 1, wherein at least two of the layers of optically transmissive material are sensing elements having resistances responsive to incident light.

Claim 20 is dependent on Claim 1 and therefore includes all limitations of Claim 1.

Claim 20 is allowable at least as depending from allowable base claim 1. For purposes of this appeal, claim 20 stands or falls with claim 1.

Claim 21

Claim 21 recites the following:

The integrated optical apparatus as in claim 1, wherein at least two adjacent layers of optically transmissive material are sensing elements having resistances responsive to incident light.

Claim 21 is dependent on Claim 1 and therefore includes all limitations of Claim 1.

Claim 21 is allowable at least as depending from allowable base claim 1. For purposes of this appeal, claim 21 stands or falls with claim 1.

Claim 22

Claim 22 recites the following:

The integrated optical apparatus as in claim 1, wherein at least two non-adjacent layers of optically transmissive material are sensing elements having resistances responsive to incident light.

Claim 22 is dependent on Claim 1 and therefore includes all limitations of Claim 1.

Claim 22 is allowable at least as depending from allowable base claim 1. For purposes of this appeal, claim 22 stands or falls with claim 1.

Claim 23

Claim 23 recites the following:

The integrated optical apparatus as in claim 1, wherein all of the layers of optically transmissive material are sensing elements having resistances responsive to incident light.

Claim 23 is dependent on Claim 1 and therefore includes all limitations of Claim 1.

Claim 23 is allowable at least as depending from allowable base claim 1. For purposes of this appeal, claim 23 stands or falls with claim 1.

For the reasons set forth above, appellants respectfully assert that claims 1, 5, 6, 10, 11, and 19-23 are allowable and that, accordingly, the rejection of claims 1, 5, 6, 10, 11, and 19-23 should be reversed.

Respectfully submitted,
KLAAS, LAW, O'MEARA & MALKIN, P.C.

June 18, 2007

/John Pessetto/
John R. Pessetto
Registration No. 48,369
1999 Broadway, Ste 2225
Denver, CO 80202
(303) 298-9888

(8) CLAIMS APPENDIX

1. An integrated optical apparatus configured to detect and diffract light transmitted from a light source external to the integrated optical apparatus, the integrated optical apparatus comprising:

a substrate; and

a diffractive optical element including:

a plurality of stacked layers of optically transmissive material formed on the substrate, wherein at least one of the layers of optically transmissive material is a sensing element having a resistance responsive to incident light.

2-4. (Canceled)

5. The integrated optical apparatus as in claim 1, wherein the sensing element is configured to provide a response to a control circuit, external to the integrated optical apparatus, for measuring the response of the sensing element to incident light, and for controlling the light source.

6. The integrated optical apparatus as in claim 1, wherein the light source is a laser.

7-9. (Canceled)

10. The integrated optical apparatus as in claim 1, further comprising:

a first and second contact on the sensing element for measuring the resistance of the sensing element.

11. The integrated optical apparatus as in claim 1, wherein the optically transmissive material includes a semiconductor.

12-18. (Canceled)

19. The integrated optical apparatus as in claim 1, wherein the temperature of the sensing element is responsive to light.

20. The integrated optical apparatus as in claim 1, wherein at least two of the layers of optically transmissive material are sensing elements having resistances responsive to incident light.

21. The integrated optical apparatus as in claim 1, wherein at least two adjacent layers of optically transmissive material are sensing elements having resistances responsive to incident light.

22 The integrated optical apparatus as in claim 1, wherein at least two non-adjacent layers of optically transmissive material are sensing elements having resistances responsive to incident light.

23. The integrated optical apparatus as in claim 1, wherein all of the layers of optically transmissive material are sensing elements having resistances responsive to incident light.

(10) RELATED PROCEEDINGS AND INTERFERENCES APPENDIX

No related proceedings are referenced in (2) above. Accordingly, no copies of decisions in related proceedings are provided.